

## 2K12 Cube - SA-6 GAINFUL

DATA FOR 2016 (in progress)

The 2K12 Kub complex, the 3M9, 3M9M, 3M9M1, 3M9M2, 3M9M3, 3M9M4 missile - SA-6 GAINFUL

The Kvadrat complex (export mod.), the 3M9M missile

★ Self-propelled anti-aircraft missile system for the air defense of ground forces. The complex was intended to provide air defense of ground forces and mainly tank divisions from air defense weapons at low and medium altitudes. The development of the SAM system was started by the Resolution of the Central Committee of the CPSU and the Council of Ministers of the USSR dated July 18, 1958. The lead developer of the SAM system is OKB-15 GKAT (formerly a branch of NII-17 GKAT - development of aircraft radars, Zhukovsky). Soon OKB-15 was transferred to the State Committee for Radio Electronics (GKRE) and later renamed the Research Institute of Instrument Engineering of the USSR Ministry of Radio Engineering Industry. The chief designer of the air defense missile system at the initial stage of development was the head of OKB-15, V.V. Tikhomirov. The development of the components of the complex was carried out by the following cooperation: - self-propelled reconnaissance and guidance unit (SURN) - OKB-15, chief designer - A.A. Rastov; - self-propelled launcher (SPU) - OKB-203 of the Sverdlovsk Council of National Economy (later - State Design Bureau of Compressor Engineering - GKBKM MAP, now - NPP Start), chief designer - A.I. Yaskin; - tracked chassis for SAM systems - Design Bureau of the Mytishchi Machine-Building Plant of the Moscow Regional Council of National Economy (later renamed as OKB-40 of the Ministry of Transport Machine-Building, now - Design Bureau as part of the PO Metrovagonmash), Chief Designer - N.A. Astrov; - anti-aircraft guided missile (SAM) - Design Bureau of Plant No. 134 of the State Aviation Committee (later - GosMKB Vypel), Chief Designer - I.I. Toropov; - semi-active missile homing head - OKB-15, Chief Designer - Yu.N. Vekhov (since 1960 - I.G. Akopyan); According to the Resolution of 1958, it was planned to begin joint tests of the SAM system in the 2nd quarter of 1961, but both the development and testing of the complex were significantly delayed. One of the reasons for the delay is considered to be the novelty of the technical solutions implemented in the complex. As a result, the chief designers of the complex and the rocket were removed from their positions. ★★

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Self-propelled launcher 2P25 SAM 2K12 "Kub-M3" with missiles 3M9M3 (photo - Bundesgerhard, 2002, [source](#) ).

Author: [DIMMI](#)

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## 9K31 Strela-1 - SA-9 GASKIN

DATA FOR 2016 (standard update)

The 9K31 Strela-1 complex, the 9M31 missile - SA-9 GASKIN

The 9K31M Strela-1M complex, the 9M31M missile - SA-9 GASKIN

★ Anti-aircraft missile system of the air defense of ground forces / project of a portable anti-aircraft missile system (MANPADS). The development of the complex as the [9K31](#) MANPADS was started by the Resolution of the Council of Ministers of the USSR No. 946-398 of August 25, 1960 in response to the development of a similar complex in the USA and simultaneously with the [9K32 Strela-2](#) MANPADS . The developer of the MANPADS and the 9M31 missile was OKB-16 GKOT (later renamed the Precision Engineering Design Bureau - KBTM, now the Tochmash Design Bureau), the chief designer was A.E. Nudelman. The development of the Strela-1 MANPADS was carried out in parallel with a more advanced development - the [Strela-2](#) MANPADS . When it became clear that the development of a MANPADS with an IR homing head ( [Strela-2](#) ) would be successful, it was decided to use the developments on the Strela-1 MANPADS to create a mobile SAM system with higher requirements for the range and altitude of target destruction. Thus, in 1962-1963, the

development of the MANPADS was discontinued and the development of the Strela-1 short-range SAM system for ground forces was started. When moving on to designing a troop self-propelled SAM, the developer proposed increasing the range to 5 km, and the altitude of target destruction to 3.5 km. The achievement of the performance characteristics was ensured by increasing the missile weight from 15 to 25 kg, the caliber from 100 to 120 mm, and the length of the missile from 1.25 to 1.8 m. Organizationally, the new SAM was proposed to be used in the air defense units of motorized rifle and tank regiments. It was proposed to use the BRDM-2 as the chassis of the launcher. The new SAM was planned to be presented for joint tests in the 3rd quarter of 1964. However, due to difficulties with fine-tuning the seeker head, the development was delayed until the beginning of 1967. State tests of the Strela-1 SAM were conducted in 1968 at the Donguz proving ground. The system was accepted into service by the Resolution of the Central Committee of the CPSU and the Council of Ministers of the USSR dated April 25, 1968. Serial production of the 9A31 SAM combat vehicle was carried out at the Saratov Aggregate Plant of the USSR Ministry of Defense, and the 9M31 missile at the Kovrov Mechanical Plant of the USSR Ministry of Defense. For the development and acceptance into service of the Strela-1 SAM system, A.E. Nudelman, V.I. Shkolikov, G.S. Terentyev, and B.G. Paperny were awarded the USSR State Prize in 1970. ★★



Combat vehicle 9A31 SAM 9K31 "Strela-1" ( <http://www.kbtchmash.ru/> ).

Author: [DIMMI](#)

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## S-25 Berkut Complex - SA-1 GUILD

DATA AS OF 2010 (in progress)

S-25 "Berkut" / "Sosna" complex, B-300 missile - SA-1 GUILD

S-25M complex

★★★

The first domestic multi-channel air defense system / anti-aircraft missile system. The development of the possibility of creating an SAM system was started by order of I.V. Stalin in the late 1940s. The Berkut SAM system was created specifically for the Moscow air defense system in KB-1 (formerly SB-1) of the 3rd Main Directorate of the USSR Council of Ministers under the supervision of chief designers P.N. Kuksenkov and S.L. Beria (son of L.P. Beria). Since 1953, the chief designer of the S-25 system is A.A. Raspletin (formerly deputy chief designer). The missile was created in OKB-301 of the USSR Ministry of Aviation Industry under the supervision of chief designer S.A. Lavochkin. Ground equipment - GSKB MMP (future GSKB Spetsmash of the USSR Ministry of Medium Machine Building) under the supervision of V.P. Barmin. Guidance and control means - NII-244 of the USSR Ministry of Radio Industry.

The development of the complex was initiated by the Resolution of the USSR Council of Ministers No. 3389-1426 of August 9, 1950. The task was to create an air defense system capable of providing all-round defense of Moscow by simultaneously firing at targets detected at a distance of 200 km with the destruction of bombers flying at a speed of up to 1000 km/h at altitudes of up to 20-25 km with a probability close to 100%. The range of the missiles is 30-35 km. The decree established the following deadlines for the readiness of the prototypes of the air defense missile system:

- 4 prototypes of the guidance radar - February 1952
- prototypes of the missile equipment - July 1951
- 50 prototypes of missiles (surface-to-air and air-to-air, 25 each) - February 1952
- experimental prototype of the detection radar - July 1951
- 2 prototypes of the detection radar - May 1952
- prototype of the communication equipment for the detection radar and the guidance and control radar of the air defense missile system - May 1952
- development of technical designs for the specified systems - by March 1, 1951.

The composition of the air defense system according to the Decree of August 9, 1950:

- 56 air defense firing complexes located in two rings, located 45-50 and 85-90 kilometers from the center of Moscow;
- A-100 all-round surveillance radars, located at long-range (200-300 kilometers) and short-range (25-30 kilometers) lines and designed for early detection of targets;
- command posts;
- technical bases;

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- road network;
- communication system

Each firing complex included a B-200 central guidance radar and a launch position for 60 B-300 missiles. In its sector, it was possible to simultaneously fire up to 20 targets with 20 missiles.



A target missile based on the "217M" missile of the S-25M SAM system and the antenna post of the B-200 radar (part) of the S-25 SAM system / SA-1 GUILD in the museum at Khodynka Field in Moscow (photo by Tadeusz Mikutel, <http://pvo.guns.ru> )

Author: [DIMMI](#)

Created: 03.11.2010 21:13:15

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### Complex 9K716 Volga (project)

**DATA FOR 2016 (standard update)**

**Complex 9K716 "Volga", missile 9M716 (?)**

★★★★

Front (operational-tactical extended range) missile system. The system was developed using the experience of developing the OTR "Oka" and "Oka-U" by the Design Bureau of Mechanical Engineering (Kolomna) in the first half of the 1980s, chief designer - S.P. Nepobedimiy. The system was created as part of a competition to replace the extended-range missiles "Temp-S". The main competitor in the competition was the "Agat" system developed by the Moscow Institute of Thermal Engineering. A preliminary design for the system was developed ( [source](#) ).

In 1980, the Kapustin Yar test site began preparations for testing the "Volga" missile system with a range of 600 km (probably, such a range was included in the first version of the customer's TTT). Due to the fact that the range turned out to be non-standard for the configuration of the test site, the option of arranging the launch site on site 4A was considered (source - Zakharov).

In 1987, a prototype chassis for the SPU and TSM of the complex was manufactured, chassis testing began, and a prototype TSM was equipped at KBM. Development was stopped in the late 1980s (probably in 1988-1989) at the stage of designing the complex and experimental development of support systems (TSM, etc.) in connection with the conclusion of the INF Treaty.



The Volga complex is in operation (Allocer, <http://allocer.next.ru> , 2010)

Author: [DIMMI](#)

Created: 26.07.2009 01:55:50

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### North Korean Medium Range Missiles

DATA FOR 2014 (standard update)

NoDong-A

TaepoDong-1

Musudan / NoDong-B

KN-08 / NoDong-C / Hwasong-13

★★★



General information on the DPRK's medium-range (MRBM) and intermediate-range (IRBM) missiles (from 1,000 to 5,000 km).





NoDong-A missiles on a MAZ-547 chassis launcher during a parade in Pyongyang, April 15, 2012 ( <http://nkleadershipwatch.wordpress.com> ).

Author: [DIMMI](#)

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### KN-08 / NoDong-C / Hwasong-13

DATA FOR 2015 (standard update)

KN-08 / NoDong-C / Hwasong-13

★★★★



Intercontinental ballistic missile. For some time it was considered an intermediate-range ballistic missile (IRBM). Tests of the missile engines at North Korean test sites were noted by Western observers in late 2011. The KN-08 complexes were first publicly shown at a parade in Pyongyang on April 15, 2012. The missiles were equipped with mock-ups of the warheads. In addition, there is an opinion that the missiles themselves were nothing more than mock-ups, since there are doubts about the possibility of moving liquid-propellant missiles on transporters of this size without a container due to the possibility of mechanical deformation of the missile body structure.

At the parade dedicated to the 70th anniversary of the founding of the DPRK on October 10, 2015, another version of the KN-08 missile was shown on the same transporters, which, however, has common features with the 2012 version. There is an assumption that in 2012, "fake" models of missiles were shown, and in 2015, models of real KN-08 missiles were shown.

The name of the complex in the DPRK is HS-13 / Hwasong-13. Decoding the name KN-08 - Korean North, 8th sample.



KN-08 missiles at the parade in Pyongyang on October 10, 2015 (photo - EPA, <http://militaryrussia.ru/forum/> ).



Author: [DIMMI](#)

Created: 11.10.2015 22:52:39

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## OKR Divnomorye

**DATA FOR 2016 (standard update)**  
**ROC "Divnomorye" / "Divnomorye-U"**

Electronic reconnaissance (SAR) and control system / electronic warfare (EW) system. As of December 2013, using the developments of the "Moscow-1" system, it is being developed by KRET enterprises. Completion of development and presentation of the system to the Russian Ministry of Defense is expected by 2016. First publicly mentioned at a press conference at KRET on 11.12.2013 ([source](#)). The system

is **designed** for reconnaissance of air and space targets, radio suppression, and jamming of air and space-based radar surveillance systems ([source](#)).

Author: [DIMMI](#)

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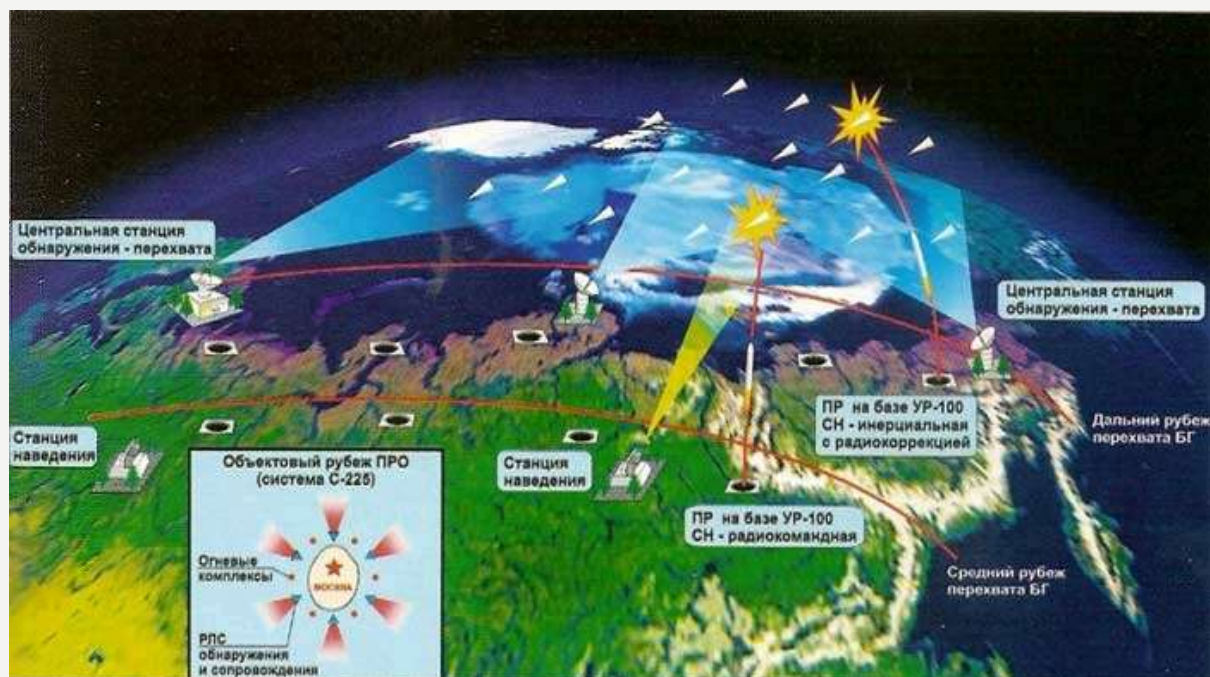
## Taran System (project)

**DATA AS OF 2015 (standard replenishment)**  
**Taran system (project), UR-100 complex and missile**

A project for a strategic missile defense system proposed for development by V.N. Chelomey's OKB-52. The project was proposed to the USSR Government on its own initiative in August 1961 using the UR-100 universal ICBM ("universal missile") developed by the same OKB-52. It was supposed to intercept attacking targets with target designation from the TsSO-P radar (A.L. Mintz), located in the missile-hazardous direction 500 km from Moscow towards Leningrad (wavelength range 30 cm), as well as according to data from the RO-1 and RO-2 AWACS posts (Murmansk and Riga). The interception was to be carried out by ballistic launches of UR-100 ICBMs with 10 Mt nuclear warheads at "extended" meeting points with possible trajectories of attacking ICBMs. The finishing off of the ICBM warheads that had broken through was supposed to be done using the S-225 zonal missile defense systems.

Resolution of the Central Committee of the CPSU and the Council of Ministers of the USSR No. 389-140 on the creation of the UR-100 missile system with a simplified silo launch and an ampulized universal UR-100 missile was issued on March 30, 1963. The Resolution stipulates the development of the UR-100 missile both as a ballistic missile for hitting ground targets and for the country's anti-missile defense ([source - Resolution](#)). The start date for joint tests of the complex was set by the Resolution for the 4th quarter of 1964. Chief Designer of the Taran missile defense system is A.L. Mintz.

According to sources, when in 1964 Academician M.V. Keldysh informed the government that in order to repel a raid by 100 ICBMs it would be necessary to detonate 200 anti-missiles with nuclear warheads over the country's territory, the "Taran" theme was closed by an order from N.S. Khrushchev. The revival of the ABM system was proposed by V.N. Chelomey in response to SDI in the 1980s, but the proposal did not receive support from the country's leadership. Full-scale design work on the "Taran" ABM system was not carried out.



Basic diagram of the Taran missile defense system (Strategic ground-based missile systems. Moscow, Military Parade 2007, 248 p.)

Author: [DIMMI](#)

Created: 28.03.2010 15:28:40

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## Ikar complex, R-36M3 / 15A18M2 missile (project)

**DATA FOR 2016 (standard update)**  
**Ikar complex, R-36M3 / 15A18M2 missile (project)**

A heavy intercontinental ballistic missile of the fifth generation. The preliminary design of the missile and the complex was developed at the Yuzhnoye Design Bureau (Dnepropetrovsk, Ukraine) under the supervision of Academician of the USSR Academy of Sciences V.F. Utkin in 1991. Work on the project was terminated in 1991-1992. Some sources cite the SALT-2 negotiations as the reason for the termination of development, but most likely there were several reasons. One cannot ignore the certain nationalization of the development of ICBMs for the Russian Strategic Missile Forces.

In some literature, the index 15A18M2 is mistakenly attributed to the R-36M2 missile. The index 15A19 is also sometimes mistakenly attributed to the Ikar project.

Author: [DIMMI](#)

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## Complex P-260T Redut-2US / module R-431AM MIK-MKS

**DATA FOR 2016 (standard update)****P-260T "Redut-2US" Complex****R-431AM MIK-MKS Antenna Module**

Multipurpose mobile communications complex. The P-260T "Redut-2US" telecommunications complex with the R-431AM MIK-MKS family antenna module ( [source](#) ) was developed by NPF "Mikran" (Tomsk, chief designer - V.Ya.Gyunter) during the "Redut-2US" R&D project to create a mobile communications system. The "Redut-2US" complexes are sometimes called "telecommunication multimedia complexes" in the media ( [source](#) ). Serial production of the complex began in 2011 jointly with the Yurginsky Machine-Building Plant. The complex was accepted for supply to the Russian Armed Forces by order of the Minister of Defense in July 2012. ★★ ★



The R-431AM "MIK-MKS" communications complex in the stowed position (photo - NPF "Micran", <http://www.micran.ru> ).

Author: [DIMMI](#)

Created: 28.04.2013 22:01:58

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## Other unrealized missile defense and air defense projects

**DATA AS OF 2010 (standard update)****Random compilation of data on unrealized or unidentified missile defense projects**

★★

**prior to the 1960s**

I-32 - a research program into the possibility of detecting and intercepting long-range ballistic missiles. The program was carried out by NII-885 and NII-20 in 1948.

"Barrier" - preliminary design of the zonal missile defense system Radiotechnical Laboratory of the USSR Academy of Sciences (RALAN), development was carried out in 1954.

The missile defense system with the AEW radar "Dunai-2" - development of the preliminary design of the missile defense system with the AEW radar "Dunai-2" was proposed by KB-1 (Raspletin, Kisunko) together with OKB-2 MAP (missiles, future MKB "Fakel") in 1954. Later, the preliminary design was implemented in the "A" missile defense system .

**1960s :**

"Fon-1" - a project of a two-tier missile defense system with space-based elements by KB-1 (TsNPO Vypel). MKB Fakel and OKB Novator were involved (or were supposed to be involved) in developing the project (1968).

Author: [DIMMI](#)

Created: 28.03.2010 17:15:23

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## R-500/9M728 missile (Iskander-K complex).

**DATA FOR 2015 (in progress)****The Iskander-K complex (incorrect identification), the R-500 missile****The R-500 missile / 9M728 of the 9K720 Iskander-M missile system Cruise missile of the**★★ ★ 9K720 Iskander-M

operational-tactical missile system / multipurpose modular missile system of the ground forces . Until 2010, there was an erroneous assumption that the R-500 cruise missile was being tested as part of the development of the Iskander-K missile system, which is similar to the Iskander system in terms of its auxiliary equipment and other features, but at the turn of 2009-2010, after the Iskander system was understood as a multipurpose modular missile system of the ground forces, it became clear that the R-500 cruise missile is only one of the fire weapons of the Iskander-M system and is being developed as part of the Iskander-M R&D work. The R-500/9M728 cruise missile is used as part of the Iskander-M operational missile system ( *a concept of a modular ground forces multifunctional missile system* ). The missile was developed by the Novator Design Bureau (Ekaterinburg). As of 1998, the R-500 missile was already being developed. The first launch of the R-500 missile with the 9P78-1 SPU was carried out at the Kapustin Yar test site on May 29, 2007. State tests of the system were planned to begin in 2008, and in 2009 to accept the system into service (plans for summer 2007). As a result, the 9M728 missile was accepted into service in 2013. Special thanks to "Pensioner" ( <http://russianarms.ru> ) for assistance in preparing materials. *The data is hypothetical and based on open sources.*



Cruise missile 9M728/R-500 of the Iskander-M complex at the initial stage of flight before the wing is deployed. Exercises "Vostok-2014". Jewish Autonomous Region, 20.09.2014 (photo - Russian Ministry of Defense).

Author: [DIMMI](#)

Created: 08.02.2010 02:02:23

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## Object 292

### **DATA AS OF 2015 (standard replenishment) "Object 292"**

★ Experimental main tank / test object for the 152-mm tank gun. The tank was developed by the Kirov Plant Design Bureau (Leningrad, now JSC "Spetsmash") and VNII Transmash on the basis of the I-80 chassis with the installation of a new turret with a 152-mm gun and a new loading mechanism. General Designer - N.S. Popov. Production of the experimental tank, with the exception of the loading mechanism (it was not installed later), was completed in 1990. Tank tests at the Rzhev Tank Proving Ground were conducted in 1991. The tank tests were considered successful. ★★





Experimental tank "Object 292" in the tank museum in Kubinka, 10/17/2015 (photo - Vitaly Kuzmin, <http://vitalykuzmin.net> ).

Author: [DIMMI](#)

Created: 21.12.2010 13:01:36

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## 55Ж6 Sky - TALL RACK

### DATA AS OF 2015 (standard replenishment)

**55Zh6 / 55Zh6-1 "Nebo" - TALL RACK** Three-coordinate radar for detection and tracking of airborne objects in the meter range. By the Decree of the Council of Ministers of the USSR in early 1975, the R&D work "Nebo" was assigned, the purpose of which was to develop two unified three-coordinate radars in the meter wave range for the Air Defense Forces in a transportable version (radar 55Zh6) and for the Ground Forces in a mobile version ( [1L13 "Nebo-SV"](#) ). In the same 1975, another Resolution of the Council of Ministers of the USSR was issued, in which the R&D work "Nebo" was included in the list of the most important works of the five-year plan. Along with the R&D work, the R&D work "Ugol" was assigned to study the possibility of creating a three-coordinate radar in the meter wave range. The development of the 55Zh6 radar within the framework of the Nebo R&D project was carried out by the Gorky Research Institute of Radio Engineering and Telecommunications (Gorky, now Nizhny Novgorod, since 1991 - NNIIRT), chief designer - Alexander Zachepitsky. State tests of the 55Zh6 radar began at the Kapustin Yar proving ground in 1982 ( [source](#) ), the radar complex was accepted into service also in 1982 ( [source](#) - *Fundamentals* ... ) For the development of the radar in 1987, the NIIRT team was awarded the USSR State Prize. The radar was manufactured by the Gorky Television Plant (JSC Nitel, Nizhny Novgorod). The radar is designed to detect, identify, measure three coordinates and track air targets, including aircraft manufactured using stealth technology. It is used in the Air Defense Forces as part of an automated control system or autonomously.

★★★

Radar 55Zh6 "Sky" ( <http://nitel-oao.ru> ).Author: [DIMMI](#)

Created: 11.02.2012 23:53:11

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### 1L267 Moscow-1, modules 1L265 / 1L266

#### DATA FOR 2015 (standard update)

**The 1L267 Moskva-1 complex with 1L265/1L266 modules** Airborne electronic reconnaissance (SAR) complex / electronic warfare (EW) complex. Developed by the Gradient Research Institute of the Radio-Electronic Technologies Concern (KRET) of the Russian Technologies State Holding Company. On April 21, 1994, the Ministry of Defense (military unit No. 64176) and the Gradient Research Institute signed contract No. 54023 (previously No. 42-5) for the implementation of R&D work on the Moskva theme. The development requirements were accepted on March 24, 1994 (No. TK-0889494). The development was planned to be completed in 1998. In 2004, amendments to the 1994 contract for the implementation of the Moskva-1 R&D work were agreed upon ( [source](#) ). Supplement No. 1 to the TZ No. TK-0889-94 dated 28.12.2001 changed the composition of the equipment being developed and additionally included in the R&D project "Moscow-1" the work on the development and manufacture of the reconnaissance module - product 1L265 - previously not provided for in the cost of the R&D project "Moscow-1". This supplement was developed in pursuance of the decision of the Plenum of the Supreme People's Commissariat of the Grau Ministry of Defense "Assessment of the Status and Development Prospects of Ground-Based Electronic Warfare and ELINT Systems..." dated 17.04.2001 and the decision of the Head of Arms Orders and Deliveries dated 15.09.2001 on carrying out work on the modernization of the "Avtobaza" ELINT system within the framework of the R&D project "Moscow-1". Supplement No. 3 to the TZ, approved on 02.02.2008, expanded the functional capabilities of the system and set forth requirements to increase the efficiency of the system. The implementation of these requirements entailed significant changes in the composition of the equipment of the 1L265 and 1L266 products, more complex signal direction finding systems and the need to modify the functional software of the said products ( [source](#) ). In 2009, the Department for the Development and Organization of Orders for Aerospace Defense Systems found funds to complete the R&D work - release of working design documentation, manufacture of a prototype and software for the 1L265 object, conduct of State tests of the 1L265 and 1L266 objects, approval of the working design documentation for both of these products for serial production. State tests were completed by September 2012 (minutes dated 05.09.2012). As of 03.07.2013, the Moskva-1 R&D work was completed, the state contract for the R&D work was fulfilled, and the system itself was already accepted into service with the Russian Armed Forces ( [source](#) ). Serial production of the Moskva-1 complex is carried out by KRET enterprises, including NPO Kvant (Nizhny Novgorod, [source](#) ).

★★★★

). On April 1, 2013, the Ministry of Defense and JSC NPO Kvant signed state contract No. 8-3-41/128/ZA for the supply of the serial complex Moskva-1 1L267. As part of its implementation, on June 25, NPO Kvant and JSC KOMZ signed an agreement for the supply of 9 units of the 1L266 Automated Command Post during the period from July 1, 2014 to July 1, 2015. The contract value is 381.5 million rubles (42.4 million for one item) ( [source](#) ). On December 10, 2013, the media reported on the delivery of the first Moskva-1 complex to the Russian Armed Forces. It is reported that a contract worth 3.5 billion rubles has been signed for the delivery of more than 10 Moskva-1 SIGINT systems over 3 years (by 2016). On November 20, 2014, the media reported that 4 Moskva-1 systems will be delivered to the Russian Armed Forces by the end of November 2014 (the first in 2014) and the next 5 systems will be delivered in 2015. In total, according to our calculations, the Russian Armed Forces will have 10 Moskva-1 systems by the end of 2015. On

February 3, 2015, the media [reported](#) that deliveries of serial Moskva-1 systems will begin in February 2015, which indicates a disruption in plans for the



delivery of the systems in 2014. On March 15, 2015, deliveries of serial systems to the Russian Armed Forces began ( [source](#) ).



One of the vehicles of the SIGINT and EW complex "Moscow-1" (NPO "Kvant").

Author: [DIMMI](#)

Created: 11.12.2013 01:29:08

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### BrahMos-II / BrahMos-II (project)

**DATA AS OF 2015 (standard replenishment)**

**BrahMos-II / BrahMos-2 missile**

★★★

Hypersonic missile project. The missile is being developed by NPO Mashinostroyenia ( *source - Annual report, p. 15* ) jointly with DRDO (India). On September 29, 2008, after a meeting of the Russian-Indian Commission on Military-Technical Cooperation, the head of the BrahMos joint venture, Dr. Shivathanu Pillai, said that a decision had been made at the meeting to jointly develop the BrahMos-II hypersonic missile with a flight speed of 5-7M. The missile was planned to be created within 5 years (in 2013). In 2009, DRDO planned to test the HSTDV hypersonic demonstrator vehicle, which was being developed jointly with IAI (Israel), TsAGI and TsIAM. The purpose of the tests was to test the combustion chamber of the hypersonic ramjet.

There is an assumption that the joint development is based on a system created primarily for the Russian Armed Forces at NPO Mashinostroyenia - a missile system with the [Zircon](#) anti-ship missile . The first statements about the development of the system in the media date back to 2010-2011. As of early 2013, it is believed that the identification of the BrahMos-II system as an analogue of the Zircon anti-ship missile is either a hoax or simply a mistake. As of 2011, the organization of serial production of the Zircon missile system (and possibly Brahmos-II) is planned for the coming years at PO Strela (Orenburg, *source - Annual report, p. 15* ).

Before the opening of the Aero India 2013 aviation exhibition on February 5, 2013, a photo of the BrahMos-II missile model appeared for the first time. Later, on the opening day of the exhibition on February 6, more detailed photos of the missile model appeared.

*The data are presumptive. Sources are given.*



Model of the BrahMos-II missile at the DefExpo-2014 exhibition, 05.02.2014 ( <http://www.brahmand.com/> ).

Author: [DIMMI](#)

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## BPDM Typhoon / Typhoon-M

**DATA FOR 2015 (standard update)**

**BPDM 15Ts56 "Typhoon"**

**BPDM 15Ts56M "Typhoon-M"**

★★★

Combat anti-sabotage vehicle (BPDM). The lead developer of the vehicle is NPO Strela (Tula). The development was initially carried out in the interests of the Strategic Missile Forces. The main task is to ensure the safety of missile units. The design of the vehicle based on the BTR-80 began no later than 1999.

The development of the modernized version of the "Typhoon-M" based on the BTR-82 was carried out from 2007 to 2012. As of 2011, NPO Strela was already creating a prototype of the BPDM ( *source - Annual report for 2011* ). On August 21, 2013, the Russian Ministry of Defense announced that the first Typhoon-M BPDMs would be delivered to the security and reconnaissance units of the Strategic Missile Forces of the Teikovo Missile Division by the end of 2013. From August 19 to 30, 2013, additional retraining and advanced training courses for commanders of security and reconnaissance units, as well as for the branch's instructors, on the use of the Typhoon-M combat anti-sabotage vehicle (BPDM) are being held at the Serpukhov branch of the Peter the Great Military Academy of the Strategic Missile Forces. The first and only BPDM delivered to the Strategic Missile Forces is being used.



BPDM "Typhoon-M", autumn 2013 (photo - Konstantin Semenov, <http://tvzvezda.ru> ).

Author: [DIMMI](#)

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## 29B6 Container

**DATA AS OF 2015 (standard replenishment)**

**29B6 "Container "**

★★★

over-the-horizon detection (OHD) radar of the air and space attack warning system. The radar was developed by the Scientific and Production Complex Research Institute of Long-Range Radio Communications (NIIDAR, Moscow) with the participation of the Pravdinsky Design Bureau of the Radio Relay Equipment Plant (PKB ZRA, [source](#) ) from 1995 to 2000. The chief designer is Valentin Strelkin ( [source](#) ).

The radar is produced by the Pravdinsky Radio Plant NPO of the Almaz-Antey concern. The construction of the first radar prototype was carried out by the Granit Research and Production Technology Center (Ryazan, [source](#) ) as part of the NIIDAR R&D work since 2002. Since 2002, radar testing began and continued until 2013.

The ZGO 29B6 Container radar of the 590th separate over-the-horizon air target detection unit has entered experimental combat duty. December 2013. The 180 degree viewing sector is planned to be increased to 240 degrees in 2014.

On June 16, 2015, the media reported plans to deploy the Container radar in the eastern direction. State testing of the radar in Kovytkino (Mordovia) is planned to begin in 2015.





Receiving part of the ZGO 29B6 "Container" radar, Kovylkino, Mordovia, November-December 2013 ( [source](#) ).

Author: [DIMMI](#)

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## T-14 Armata

**DATA FOR 2015 (in progress)**

**T-14 "Armata" / Object "148" / R&D "Armata"**

★★★

Prospective universal armored platform / main tank. Development of a new heavy armored platform and the main tank of the same name was probably started in 2009-2010 to replace the previously developed platform " [Object 195](#) ". Completion of the development was planned within the framework of the program for the development of weapons and military equipment for 2011-2015 and in fact, prototypes of the tank were released by the beginning of 2015. It was assumed that the tank created under the R&D program "Armata" will meet all the requirements for a prospective tank of the Russian Ministry of Defense as of 2009-2010. Prospective tanks are supposed to arm heavy brigades of the Russian Armed Forces of a new model.

As of March 2011, there was information that the development of the platform was ordered from the Ural Design Bureau of Transport Engineering (Nizhny Tagil), and the armored vehicle was being designed. On February 17, 2012, the media, citing a statement by the Russian Minister of Defense and the director of Uralvagonzavod, reported that the prototype of the tank would be ready by 2013, and its serial production would begin in 2015. Earlier, on April 28, 2011, the former first deputy head of the Main Directorate of the Ministry of Defense of Russia, Lieutenant General Yuri Kovalenko, stated that the new tank would enter service in 2015. On March 23, 2012, the media announced that the technical design of the heavy armored vehicle platform for the Armata R&D project had been approved by the Main Armored Directorate of the Russian Armed Forces.

The model of the tank or other combat system created under the Armata R&D project was first shown to the public on July 29, 2012. On December 26, 2012, the media reported plans to purchase an experimental batch of 16 tanks on the Armata platform in 2014 for comprehensive testing. On July 8, 2013, the first closed showing of the Armata tank to the country's leadership was announced at an arms exhibition in Nizhny Tagil in September 2013 ( [source](#) ). Ultimately, only a model of the tank was presented at the closed showing at the RAE-2013 exhibition in Nizhny Tagil ( [source](#) ).

Three experimental models of vehicles on the Armata platform were released by Uralvagonzavod on September 6, 2013 - a tank, a heavy infantry fighting vehicle, and an armored recovery vehicle. The tank was scheduled to be sent for preliminary testing in October-November 2013 ( [source](#) ). Serial production of the T-14 Armata tanks is scheduled to begin in 2015.

On May 9, 2015, T-14 Armata tanks and T-13 Armata heavy infantry fighting vehicles took part in the parade on Red Square in Moscow, which was dedicated to the 70th anniversary of the Victory.



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The T-14 "Armata" tank on the streets of Moscow on the day of the parade on Red Square, May 9, 2015 (photo - Vitaly Kuzmin, <http://vitalykuzmin.net> ).Author: [DIMMI](#)

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## Program D-20 / ISV-48

DATA AS OF 2015 (to be updated)

D-20 / ISV-48 Program



R&D program for missile defense. By the Resolution of the USSR Council of Ministers of July 15, 1985, two programs for research in the interests of missile defense were approved: ground-based (D-20 program) and space-based (SK-1000 program). The lead ministry responsible for implementing the D-20 program was the USSR Ministry of Radio Industry. The D-20 program was based on the continuation of work on the creation of the [A-135](#) system , the development of the [A-235](#) and [A-1035](#) missile defense systems , and the continuation of work on the [S-550](#) system ( *historical - anti-missile* ).

After the start of work on the SDI program in the USA, the 45th Central Research Institute created the NIC PRO (National Research Center for Missile Defense) whose task was to substantiate the strategic and operational-tactical multi-echelon missile defense system and to form plans for the creation of promising systems and means, as well as programs for their experimental testing in proving ground conditions. As a result, the NIC PRO of the 45th Central Research Institute, together with the scientific department of the Ministry of Defense, research institutes and design bureaus of the defense industry, developed the ISV-48/D-20 program ( [source](#) ).

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